

**Table 16-1. Comparison of Projected Water Supply and Demand in Normal Water Years (Acre-Feet)<sup>(a)</sup>**

Supply and Demand Component		Year				
		2010	2015	2020	2025	2030
Imported Supplies	State Water Project <sup>(b)</sup>	51,400	51,400	51,400	51,400	51,400
	BBID <sup>(c)</sup>	4,500	4,500	4,500	4,500	4,500
	Yuba Accord <sup>(d)</sup>	145	145	145	145	0
Local Supplies	Arroyo del Valle <sup>(e)</sup>	7,100	7,100	7,100	7,100	7,100
Storage	Zone 7 Wells <sup>(f,g)</sup>	9,200	9,200	9,200	9,200	9,200
	Semitropic <sup>(h)</sup>	0	0	0	0	0
	Cawelo <sup>(h)</sup>	0	0	0	0	0
Planned Programs and Projects <sup>(i)</sup>		0	0	10,500	10,500	10,500
Total Water Supply		72,350	72,350	82,850	82,850	82,700
High Water Demand <sup>(j)</sup>		66,200	68,200	74,300	79,500	82,700
Comparison	Difference	6,150	4,150	8,550	3,350	0
	Difference as % of Supply	9%	6%	10%	4%	0%
	Difference as % of Demand	9%	6%	12%	4%	0%
Low Water Demand <sup>(k)</sup>		66,200	64,600	67,100	72,300	75,500
Comparison	Difference	6,150	7,750	15,750	10,550	7,200
	Difference as % of Supply	9%	11%	19%	13%	9%
	Difference as % of Demand	9%	12%	23%	15%	10%
Potential Shortage without Planned Programs and Projects <sup>(l)</sup>		0	0	(2,000)	(7,200)	(10,500)



## Notes for Table 16-1

- (a) Normal water years are defined as the median runoff or allocation years.
- (b) Projected median allocation from State Water Project is approximately 64% (51,400 divided by 80,619 AF) of Zone 7's Table A amount per the 2009 Reliability Report.
- (c) Zone 7's contract with BBID provides up to 5,000 acre-feet, and at least 2,000 acre-feet is available in a single dry year. Zone 7 staff has estimated the yield of this contract to be 4,500 acre-feet during a normal water year.
- (d) Zone 7 has a contract with DWR for water available through the Yuba Accord; the contract ends in 2025. There are four components within the contract that provide water; however, Component 1 water is used for environmental purposes and the potential yield from Component 4 water is unknown. Consequently, for conservative planning-level purposes, only Components 2 through 3 water were used in this Urban Water Management Plan.
- (e) Most of the runoff from the Arroyo del Valle watershed occurs in the winter and spring. Until the Chain of Lakes is available for diverting runoff, actual yield is limited to that which can be treated and delivered directly. Although the long-term average is 7,300 acre-feet, the median supply of 7,100 acre-feet was used per UWMP guidelines.
- (f) Zone 7 only pumps groundwater previously recharged - quantities already account for demineralization losses.
- (g) Does not include groundwater pumping quotas.
- (h) Stored water supply is not intended for normal water year conditions, but for use in dry years.
- (i) See Table 11-1. As discussed in Chapter 11, Zone 7 is updating its Water System Master Plan, and is either pursuing or identifying several future water supplies, including a Delta Fix, recycled water, water transfers, and desalination.
- (j) Includes municipal, industrial, and agricultural demands. Does not include potential water conservation savings associated with Senate Bill SBX7-7.
- (k) Includes municipal, industrial, and agricultural demands. Includes potential water conservation savings associated with Senate Bill SBX7-7.
- (l) Based on the High Water Demand scenario.



**Table 16-2. Comparison of Projected Water Supply and Demand in Single Dry Years (Acre-Feet)<sup>(a)</sup>**

Supply and Demand Component		Year				
		2010	2015	2020	2025	2030
Imported Supplies	State Water Project (10% Allocation) <sup>(b)</sup>	8,000	8,000	8,000	8,000	8,000
	Carry Over <sup>(c)</sup>	24,000	17,000	13,000	10,000	8,000
	BBID <sup>(d)</sup>	2,000	2,000	2,000	2,000	2,000
	Yuba Accord <sup>(e)</sup>	676	676	676	676	0
Local Supplies	Arroyo del Valle <sup>(f)</sup>	0	0	0	0	0
Storage	Groundwater <sup>(g)</sup>	26,200	26,200	26,200	26,200	26,200
	Semitropic <sup>(h)</sup>	9,100	9,100	9,100	9,100	9,100
	Cawelo <sup>(i)</sup>	5,000	10,000	10,000	10,000	10,000
Planned Programs and Projects <sup>(j)</sup>	Additional Supply in Existing Storage	0	0	1,000	7,000	6,000
	New Dry Year Supply	0	0	6,100	6,100	6,100
Total Water Supply		75,000	73,000	76,100	79,100	75,400
High Water Demand <sup>(k)</sup>		50,700	53,900	61,500	67,800	72,000
Comparison	Difference	24,300	19,100	14,600	11,300	3,400
	Difference as % of Supply	32%	26%	19%	14.3%	4.5%
	Difference as % of Demand	48%	35%	24%	16.7%	4.7%
Low Water Demand <sup>(l)</sup>		50,700	50,300	54,300	60,600	64,800
Comparison	Difference	24,300	22,700	21,800	18,500	10,600
	Difference as % of Supply	32%	31%	29%	23%	14%
	Difference as % of Demand	48%	45%	40%	31%	16%
Potential Shortage without Planned Programs and Projects <sup>(m)</sup>		0	0	0	(1,800)	(8,700)



## Notes for Table 16-2

- (a) Single dry year corresponds to lowest runoff or allocation.
- (b) DWR's 2009 Reliability report indicates the minimum allocation is 10%, or approximately 8,000 acre-feet (0.10 x 80,619) - this corresponds to 1977 conditions.
- (c) Carryover represents the ability to carry water from the previous year into the next. The availability of carryover decreases in the future as demands increase because more of the supply is used in the current year and is unavailable to "carry" into the following year. During a single dry year, all of the carryover is used, and there is no surplus supply to carry into the following year.
- (d) Zone 7's contract with BBID provides up to 5,000 acre-feet, and at least 2,000 acre-feet in a single dry year.
- (e) Zone 7 has a contract with DWR for water available through the Yuba Accord; the contract ends in 2025. For conservative planning-level purposes, only Components 2 through 3 water were used in this Urban Water Management Plan.
- (f) There is no Arroyo del Valle supply available to Zone 7 in a single dry year.
- (g) Zone 7 has sufficient groundwater pumping capacity to withdraw 26,200 acre-feet of stored supply. Does not include groundwater pumping quotas.
- (h) Only includes Zone 7's contracted pumpback amount. SWP allocation during 1977 conditions precludes the availability of exchange water.
- (i) For planning-level purposes, it is assumed that Zone 7 will have at least 10,000 acre-feet in Cawelo by 2015.
- (j) See table 11-1. As discussed in Chapter 11, Zone 7 is updating its Water System Master Plan, and is either pursuing or identifying several future water supplies, including a Delta Fix, recycled water, water transfers, and desalination.
- (k) Includes municipal, industrial, and agricultural demands. Does not include potential water conservation savings associated with Senate Bill SBX7-7.
- (l) Includes municipal, industrial, and agricultural demands. Includes potential water conservation savings associated with Senate Bill SBX7-7.
- (m) Based on the High Water Demand scenario.



**Tables 16-3(a). Comparisons of Projected Water Supply and Demand in Multiple Dry Years (Acre-Feet)<sup>(a)</sup> Ending in 2015**

Supply and Demand Component		Year				
		2011 (Year 1)	2012 (Year 2)	2013 (Year 3)	2014 (Year 4)	2015 (Year 5)
Imported Supplies	State Water Project <sup>(b)</sup>	23,900	47,800	15,700	22,700	19,500
	Carry Over <sup>(c)</sup>	21,000	20,200	27,600	18,100	15,600
	BBID <sup>(d)</sup>	2,000	2,000	2,000	2,000	2,000
	Yuba Accord <sup>(e)</sup>	676	676	676	676	676
Local Supplies	Arroyo del Valle <sup>(f)</sup>	930	350	520	150	4,400
Storage	Groundwater <sup>(g)</sup>	14,000	9,200	14,000	14,000	14,000
	Semitropic <sup>(h)</sup>	10,700	13,600	9,600	10,500	10,100
	Cawelo <sup>(i)</sup>	0	0	0	0	8,000
Planned Programs and Projects <sup>(j)</sup>	Additional Supply in Carry Over	0	0	0	0	0
	Additional Supply in Existing Storage	0	0	0	0	0
	New Dry Year Supply	0	0	0	0	0
Total Water Supply		73,206	93,826	70,096	68,126	74,276
High Water Demand <sup>(k)</sup>		51,300	52,000	52,600	53,300	53,900
Comparison	Difference	21,906	41,826	17,496	14,826	20,376
	Difference as % of Supply	30%	45%	25%	22%	27%
	Difference as % of Demand	43%	80%	33%	28%	38%
Low Water Demand <sup>(l)</sup>		50,600	50,500	50,500	50,400	50,300
Comparison	Difference	22,606	43,326	19,596	17,726	23,976
	Difference as % of Supply	31%	46%	28%	26%	32%
	Difference as % of Demand	45%	86%	39%	35%	48%
Potential Shortage without Planned Programs and Projects <sup>(m)</sup>		0	0	0	0	0



**Tables 16-3(b). Comparisons of Projected Water Supply and Demand in Multiple Dry Years (Acre-Feet)<sup>(a)</sup> Ending in 2020**

Supply and Demand Component		Year				
		2016 (Year 1)	2017 (Year 2)	2018 (Year 3)	2019 (Year 4)	2020 (Year 5)
Imported Supplies	State Water Project <sup>(b)</sup>	23,900	47,800	15,700	22,700	19,500
	Carry Over <sup>(c)</sup>	16,000	12,400	27,600	11,400	10,300
	BBID <sup>(d)</sup>	2,000	2,000	2,000	2,000	2,000
	Yuba Accord <sup>(e)</sup>	676	676	676	676	676
Local Supplies	Arroyo del Valle <sup>(f)</sup>	930	350	520	150	4,400
Storage	Groundwater <sup>(g)</sup>	14,000	14,000	14,000	14,000	14,000
	Semitropic <sup>(h)</sup>	10,700	13,600	9,600	10,500	10,100
	Cawelo <sup>(i)</sup>	0	0	0	9,000	10,000
Planned Programs and Projects <sup>(j)</sup>	Additional Supply in Carry Over	0	0	0	0	0
	Additional Supply in Existing Storage	0	0	0	0	0
	New Dry Year Supply	0	0	0	0	6,100
Total Water Supply		68,200	90,800	70,100	70,400	77,100
High Water Demand <sup>(k)</sup>		55,400	56,900	58,500	60,000	61,500
Comparison	Difference	12,800	33,900	11,600	10,400	15,600
	Difference as % of Supply	19%	37%	17%	15%	20%
	Difference as % of Demand	23%	60%	20%	17%	25%
Low Water Demand <sup>(l)</sup>		51,100	51,900	52,700	53,500	54,300
Comparison	Difference	17,100	38,900	17,400	16,900	22,800
	Difference as % of Supply	25%	43%	25%	24%	30%
	Difference as % of Demand	33%	75%	33%	32%	42%
Potential Shortage without Planned Programs and Projects <sup>(m)</sup>		0	0	0	0	0



**Tables 16-3(c). Comparisons of Projected Water Supply and Demand in Multiple Dry Years (Acre-Feet)<sup>(a)</sup> Ending in 2025**

Supply and Demand Component		Year				
		2021 (Year 1)	2022 (Year 2)	2023 (Year 3)	2024 (Year 4)	2025 (Year 5)
Imported Supplies	State Water Project <sup>(b)</sup>	23,900	47,800	15,700	22,700	19,500
	Carry Over <sup>(c)</sup>	13,000	2,300	16,600	0	0
	BBID <sup>(d)</sup>	2,000	2,000	2,000	2,000	2,000
	Yuba Accord <sup>(e)</sup>	676	676	676	676	676
Local Supplies	Arroyo del Valle <sup>(f)</sup>	930	350	520	150	4,400
Storage	Groundwater <sup>(g)</sup>	14,000	14,000	14,000	14,000	7,000
	Semitropic <sup>(h)</sup>	10,700	13,600	9,600	10,500	10,100
	Cawelo <sup>(i)</sup>	0	0	4,000	10,000	10,000
Planned Programs and Projects <sup>(j)</sup>	Additional Supply in Carry Over	4,000	10,200	11,000	16,900	16,500
	Additional Supply in Existing Storage	0	0	2,000	0	7,000
	New Dry Year Supply	6,100	6,100	6,100	6,100	6,100
Total Water Supply		75,300	97,000	82,200	83,000	83,300
High Water Demand <sup>(k)</sup>		62,800	64,000	65,300	66,500	67,800
Comparison	Difference	12,500	33,000	16,900	16,500	15,500
	Difference as % of Supply	17%	34%	21%	20%	19%
	Difference as % of Demand	20%	52%	26%	25%	23%
Low Water Demand <sup>(l)</sup>		55,600	56,800	58,100	59,300	60,600
Comparison	Difference	19,700	40,200	24,100	23,700	22,700
	Difference as % of Supply	26%	41%	29%	29%	27%
	Difference as % of Demand	35%	71%	41%	40%	37%
Potential Shortage without Planned Programs and Projects <sup>(m)</sup>		0	0	(2,200)	(6,500)	(14,100)



**Tables 16-3(d). Comparisons of Projected Water Supply and Demand in Multiple Dry Years (Acre-Feet)<sup>(a)</sup> Ending in 2030**

Supply and Demand Component		Year				
		2026 (Year 1)	2027 (Year 2)	2028 (Year 3)	2029 (Year 4)	2030 (Year 5)
Imported Supplies	State Water Project <sup>(b)</sup>	23,900	47,800	15,700	22,700	19,500
	Carry Over <sup>(c)</sup>	10,000	0	100	0	0
	BBID <sup>(d)</sup>	2,000	2,000	2,000	2,000	2,000
	Yuba Accord <sup>(e)</sup>	0	0	0	0	0
Local Supplies	Arroyo del Valle <sup>(f)</sup>	930	350	520	150	4,400
Storage	Groundwater <sup>(g)</sup>	14,000	14,000	6,000	0	0
	Semitropic <sup>(h)</sup>	10,700	2,600	9,600	10,500	10,100
	Cawelo <sup>(i)</sup>	1,300	3,000	10,000	2,700	0
Planned Programs and Projects <sup>(j)</sup>	Additional Supply in Carry Over	6,000	6,300	24,300	12,000	6,300
	Additional Supply in Existing Storage	0	11,700	8,000	21,300	24,000
	New Dry Year Supply	6,100	6,100	6,100	6,100	6,100
Total Water Supply		74,900	93,900	82,300	77,500	72,400
High Water Demand <sup>(k)</sup>		68,600	69,500	70,300	71,200	72,000
Comparison	Difference	6,300	24,400	12,000	6,300	400
	Difference as % of Supply	8%	26%	15%	8%	1%
	Difference as % of Demand	9%	35%	17%	9%	1%
Low Water Demand <sup>(l)</sup>		61,400	62,300	63,100	64,000	64,800
Comparison	Difference	13,500	31,600	19,200	13,500	7,600
	Difference as % of Supply	18%	34%	23%	17%	10%
	Difference as % of Demand	22%	51%	30%	21%	12%
Potential Shortage without Planned Programs and Projects <sup>(m)</sup>		(5,800)	0	(26,400)	(33,200)	(36,000)



### Notes for Table 16-3

- (a) The multiple dry year period corresponds to the lowest consecutive 5-year projected runoff or allocation. Each five year period is a new five-year drought.
- (b) Median Table A amount was used as the normal year allocation. Based on DWR's 2009 Reliability report, the lowest consecutive 5-year allocation is over 1988 to 1992.
- (c) Carryover represents the ability to carry water from the previous year into the next, and includes both the SWP and Lake Del Valle. The availability of carryover decreases in the future as demands increase because more of the supply is used in the current year and is unavailable to "carry" into the following year.
- (d) Zone 7's contract with BBID provides up to 5,000 acre-feet, and at least 2,000 acre-feet over a multi year drought.
- (e) Zone 7 has a contract with DWR for water available through the Yuba Accord; the contract ends in 2025. For conservative planning-level purposes, only Components 2 and 3 water were used in this Urban Water Management Plan.
- (f) Most of the runoff from the Arroyo del Valle watershed occurs in the winter and spring. Until the Chain of Lakes is available for diverting runoff, actual yield is limited to that which can be treated and delivered directly. Although the long-term average yield is 7,300 acre-feet the median supply of 7,100 acre-feet was used in normal water years per UWMP Guidelines. The lowest consecutive 5-year runoff occurred over 1987 to 1991.
- (g) Zone 7 only pumps groundwater previously recharged. Does not include groundwater pumping quotas.
- (h) Includes Zone 7's contracted pump back amount (9,100 af) and available exchange water. Exchange water depends on SWP allocation.
- (i) For planning-level purposes, it is assumed that Zone 7 will have at least 10,000 acre-feet in Cawelo by 2015.
- (j) As discussed in Chapter 11, Zone 7 is updating its Water System Master Plan, and is either pursuing or identifying several future water supplies, including a Delta Fix, recycled water, water transfers, and desalination.
- (k) Includes municipal, industrial, and agricultural demands. Does not include potential water conservation savings associated with Senate Bill SBX7-7 or voluntary water conservation savings.
- (l) Includes municipal, industrial, and agricultural demands. Includes potential water conservation savings associated with Senate Bill SBX7-7.
- (m) Based on the High Water Demand scenario.

